



FIG. 1 is a schematic diagram of a gasification system 10 for converting biomass to a gas fuel. The system 10 includes a fuel system 20, a gasifier 22, a cyclone 24, a gas cleaner 26, a gas heater 28, a gas burner 30, and a gas storage tank 32. The fuel system 20 includes a truck unloader 21, a disc screen 23, a fuel metering bin 25, and a fuel storage tank 27. The gasifier 22 is a fixed bed gasifier that receives biomass from the fuel metering bin 25 and produces a gas stream 29. The gas stream 29 is cleaned in the cyclone 24 and then passes through the gas cleaner 26. The cleaned gas stream 29 is then heated in the gas heater 28 before being burned in the gas burner 30. The gas burner 30 is connected to a gas storage tank 32. The gas storage tank 32 is used to store the gas fuel for later use.

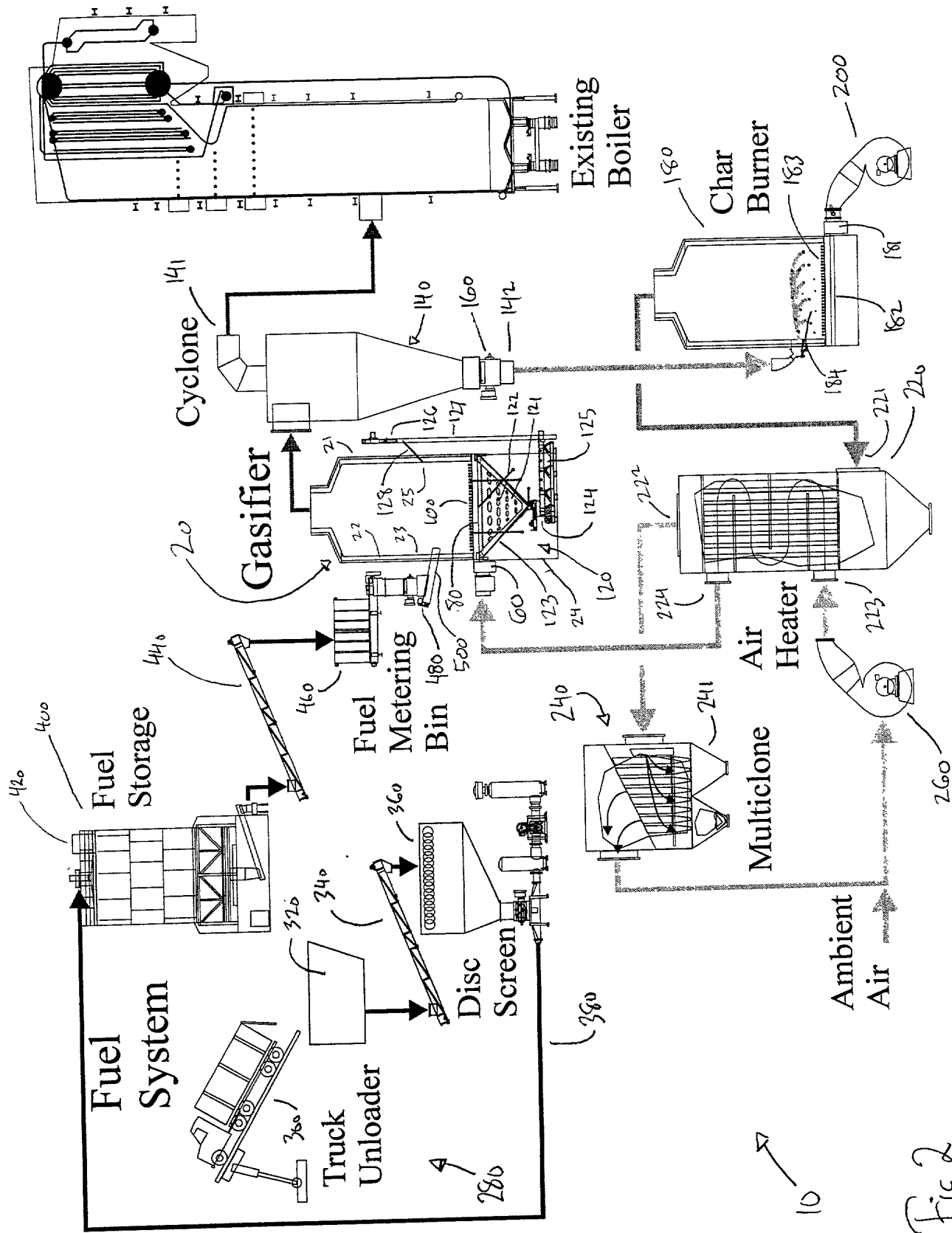


Fig 2

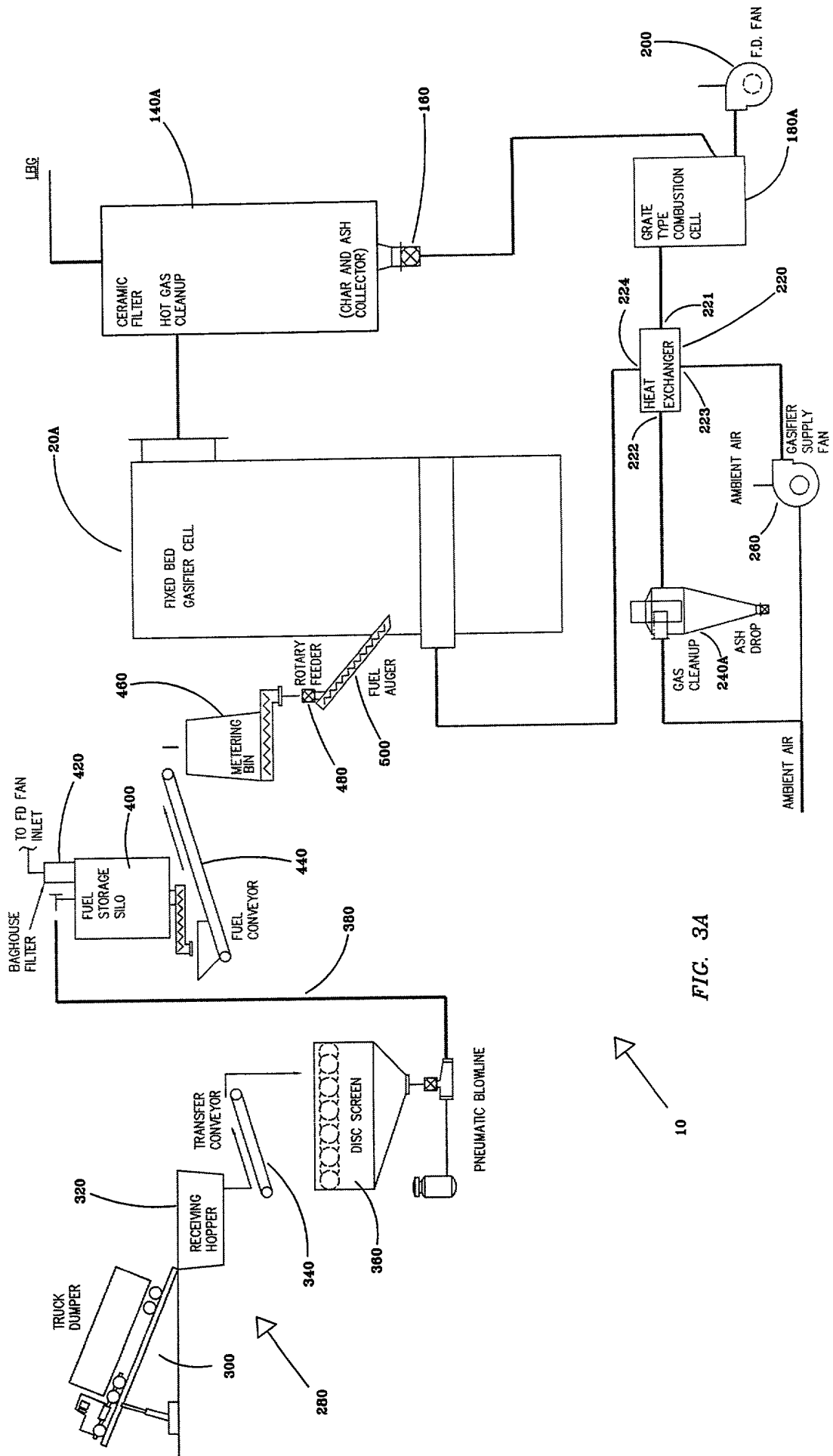


FIG. 3A

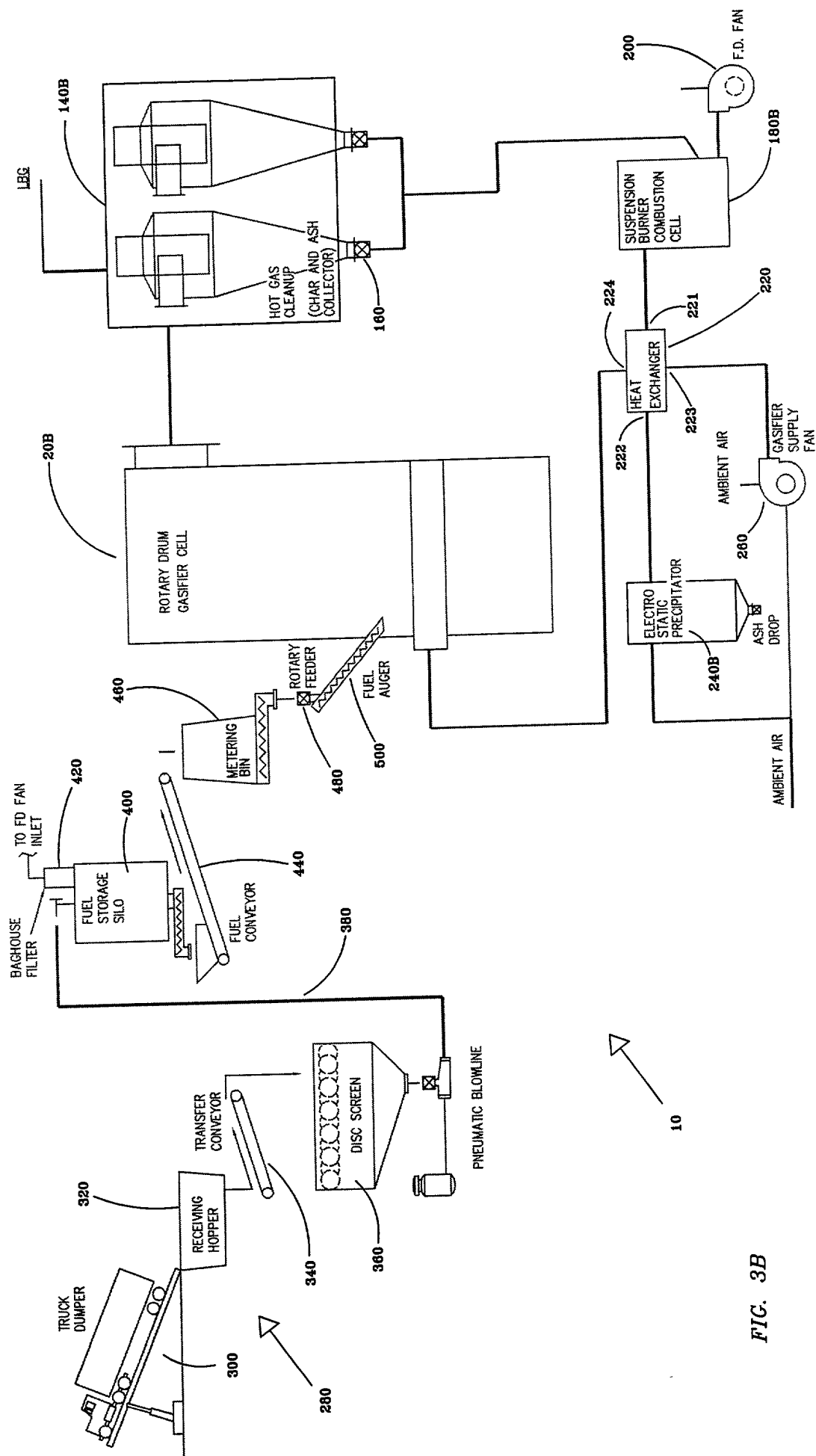


FIG. 3B



FIG. 4 is a schematic diagram of a fluid bed gasifier system. The system includes a metering bin (460) connected to a rotary feeder (480) which feeds fuel (500) into a fluid bed gasifier cell (20). Ambient air (260) is drawn in by a gasifier supply fan (260) and enters the cell. The cell is equipped with a bed changeout system (120) and a tramp (125). The system is controlled by a tramping mechanism (126) and a tramping system (127).

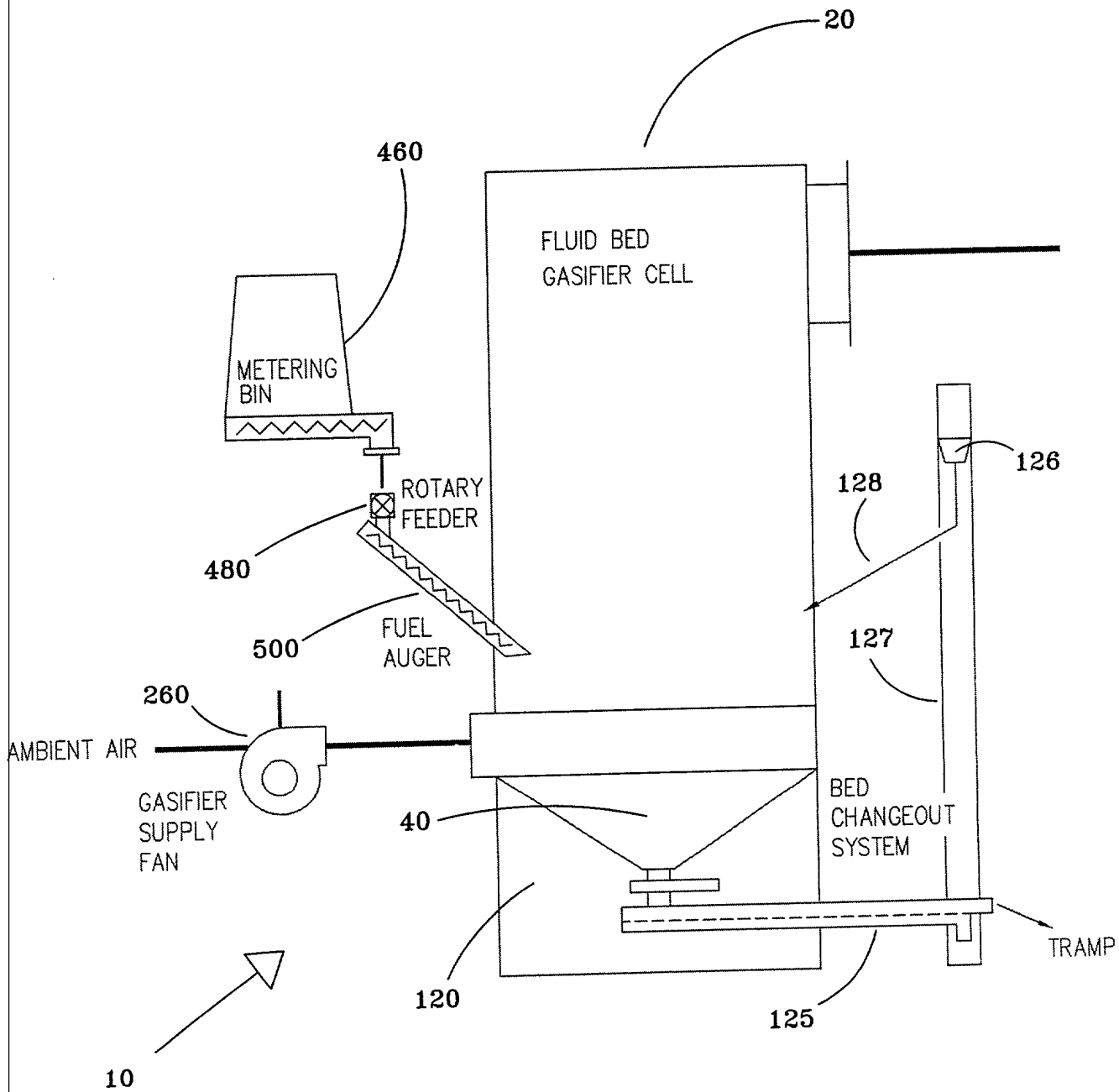


FIG. 4

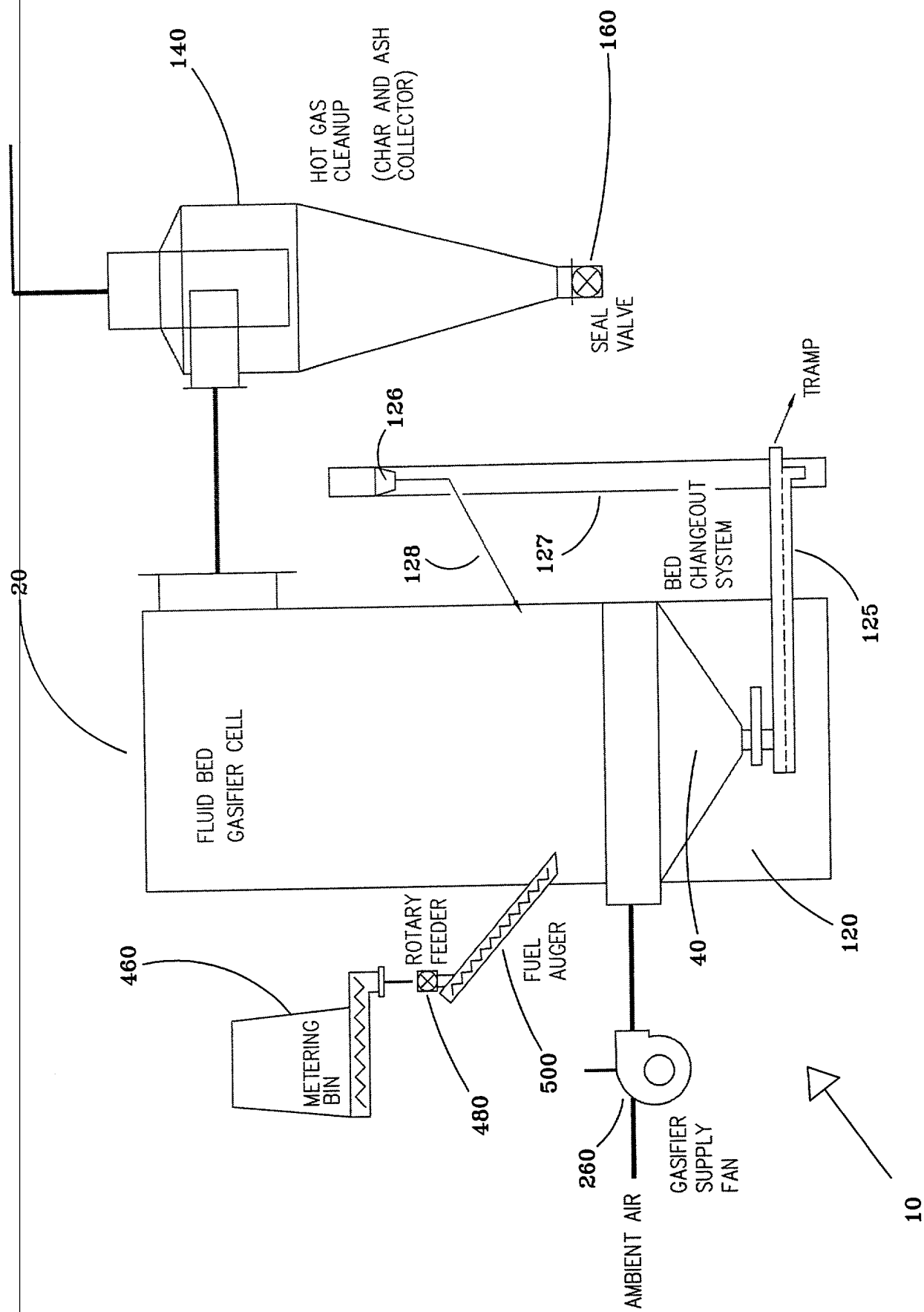


FIG. 5

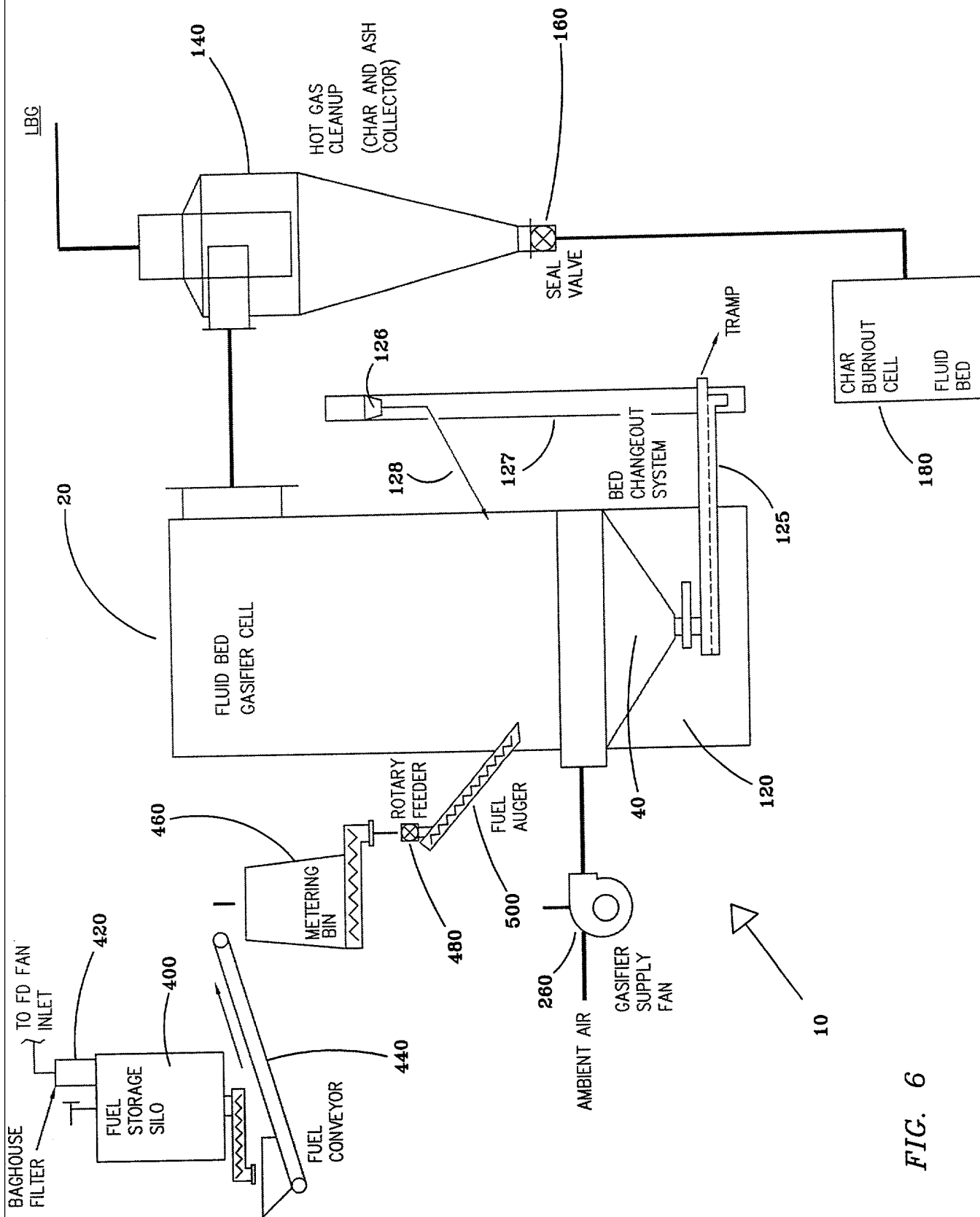


FIG. 6



FIG. 7 is a schematic diagram of a fluid bed gasifier system. The system includes a fuel storage silo (400) with a fuel conveyor (440) leading to a metering bin (460). A rotary feeder (480) and fuel auger (500) deliver fuel to the fluid bed gasifier cell (20). The gasifier cell is connected to a bed changeout system (120) which includes a tramp (125) and a seal valve (160). The gasifier cell is also connected to a hot gas cleanup (140) which is a char and ash collector. The hot gas cleanup is connected to a char burnout cell fluid bed (180) which is connected to a heat exchanger (224). The heat exchanger is connected to a gas cleanup (240) which includes an ash drop (260) and is connected to ambient air (220) via a gasifier supply fan (260). The gas cleanup is also connected to a gasifier supply fan (260) which is connected to ambient air (220). The gasifier supply fan (260) is connected to ambient air (220) via a gasifier supply fan (260). The gasifier supply fan (260) is connected to ambient air (220) via a gasifier supply fan (260).

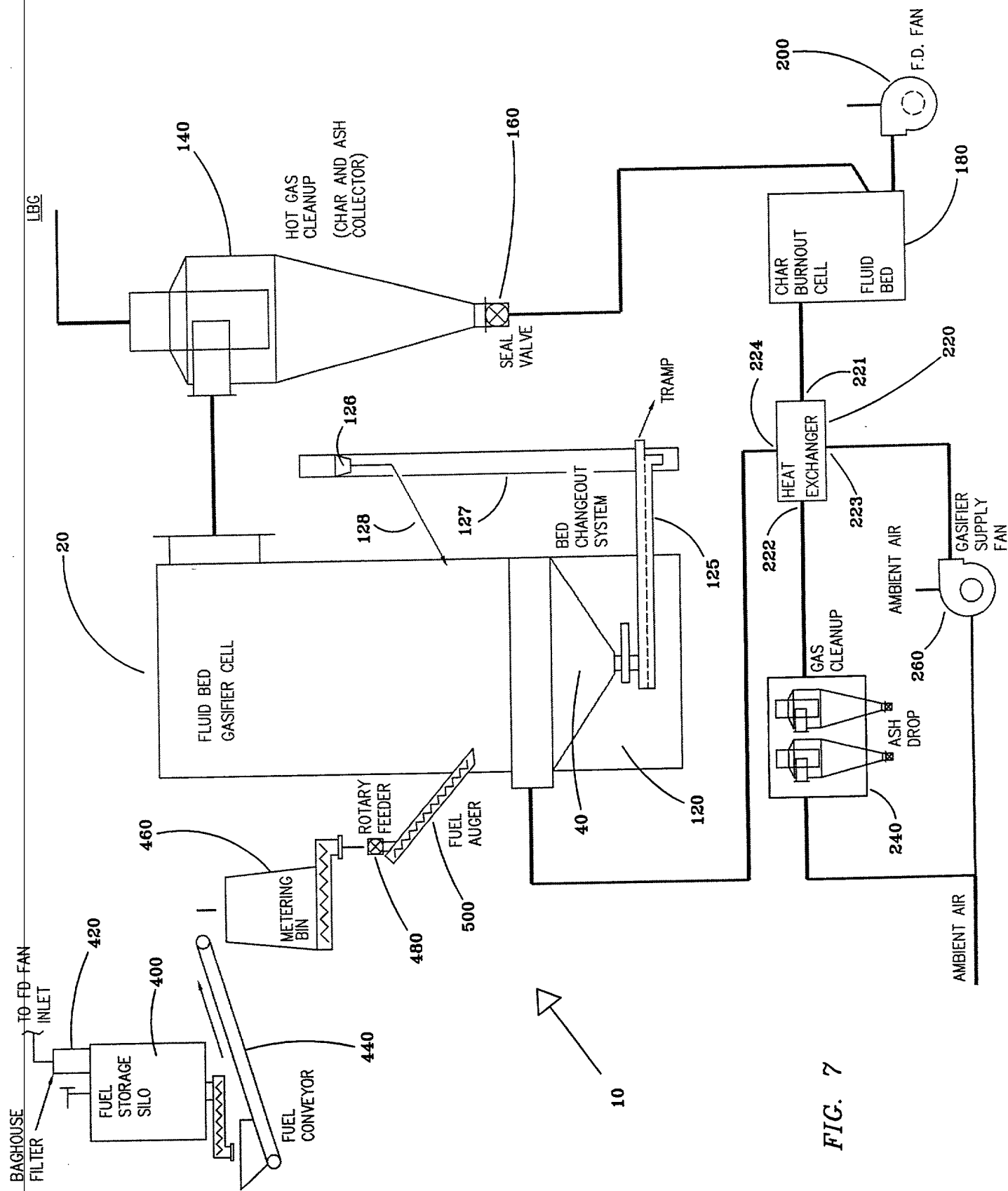


FIG. 7